

Remarks

Claims 1-15 and 17- 21 are pending. Claims 1-14 have been withdrawn. Claim 15 has been amended. Claims 16, 19, 22, and 23 have been canceled. Support for the amendment to claim 15 that states “a polar or non polar oil that is pesticidally active” can be found in claim 22 presently on file. Support for the amendment to claim 15 that states “in conditions for permitting the non-sulfonated triacylglycerol and/or the fatty acid ester and one or more of the surfactant, polar oil and non polar oil to solubilise a compound in the plant material to form an extract including compounds from the plant material that are soluble in one or more of the surfactant, polar oil and non polar oil, thereby forming a spray oil formulation” can be found in Example 1 on pages 13-15 of the specification as filed, where the extractant disclosed is ethylated canola oil and non-ionic surfactants, and on page 10, lines 19-23 of the specification as filed, where the extractant disclosed includes esterified vegetable oil, a non polar oil and surfactants. No new matter is believed to be added by this amendment. Consideration and allowance of the pending claims is respectfully requested.

Rejection Under 35 U.S.C. § 112, first paragraph

Claims 15 and 17-23 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with written description. The examiner has stated that the “claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.”

Specifically, the examiner has stated that:

In the instant case, the invention only provides the description of some Australian native plant genus such as *Callitris*, *Tasmannia*, *Leptospermum*, *Prostanthera*, *Rhodamnia*, *Eremophila*, *Melaleuca*, *Phebalium*, *Eucalyptus*, *Acacia*, and some examples of species, and no description regarding the whole plant kingdom, which encompasses at least 350,000 species, according to Wikipedia online, or a representative number of the whole plant kingdom, is being disclosed in the specification. It is not clear exactly what other plant materials Applicant is referring to, except the samples given in page 8 of the specification. Accordingly, in the absence of sufficient recitation of the plant materials, the specification does not provide adequate written description of the claimed invention.

Applicants respectfully traverse this rejection. It would be known to one skilled in the art that “plant material” refers to any plant material regarding the extraction technique described in the specification. For example, from the 2002 Review Article “Extractions with superheated water” by Roger Smith (Journal of Chromatography 975:31-46), the phrase “plant material” is used throughout to refer to a number of plant species (please see attached). Plant material is defined in the specification on page 9, lines 10 and 11 where it is stated that the “plant material may include the whole or any part of a plant, including leaves, flowers, trunks, butts and roots.” In the MPEP 2163(I), it is stated that to “satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.” It seems clear therefore that one skilled in the art would know that plant material should be considered any whole plant extirpated from the soil, and that extraction processes using this plant material can recover “compounds produced by plants” including “pesticides, food additives, pharmaceuticals, cosmetics, cleaning and disinfecting agents and the like.” Applicants therefore respectfully request withdrawal of this rejection.

Rejection Under 35 U.S.C. § 112, second paragraph

Claims 15 and 17-23 were rejected under 35 U.S.C. § 112, first paragraph, as being indefinite. The examiner has stated that:

Claim 15 recites “contacting the extractant with a plant material to form an extract including compounds from the plant material.” First of all, it is not clear what Applicant means by “form an extract”, it could mean the mixture of plant material and the solvent, or it could mean the concentrate after the extraction wherein solvent has been removed. Second, it is not clear what Applicant means by “including compounds from the plant material”. Since the extractant will extract the compounds from the plant material, of course the compounds from plant material will be in the extract. Even if in the first case, wherein Applicant means the mixture of plant material and solvent, since the plant material is in the mixture, the compounds which are contained in the plant material should also be in the mixture. Therefore, the metes and bounds of claims are rendered vague and indefinite, and the lack of clarity renders the claims very confusing and ambiguous.

Applicants have amended claim 15 to recite “thereby forming a spray oil formulation.”

Applicants submit that as amended, the claims are not indefinite. However, Applicants note that “form an extract” does not mean “the mixture of plant material and the solvent” as “solvent extraction” is described in the specification as a “process [that] typically involves immersing plant material in a solvent for a period of time and under conditions suitable for compounds to be extracted from the plant material into the solvent, and then physically separating the solvent from the plant material” (page 1, lines 16-19 of the specification as filed). Furthermore, Applicants note that “form an extract” does not mean “the concentrate after the extraction wherein the solvent has been removed” as this is defined as a “residue.” On page 1, lines 19-21 of the specification as filed, it is stated that the “extracted compounds may then be separated from the solvent by evaporating the solvent in a heating step to provide a residue comprising extracted compounds.” Moreover, the specification does not teach removal of the solvent to form a concentrate, as the solvent used to extract compounds from the plant material also forms part of

the final formulation. As such, amending claim 15 to recite “thereby forming a spray oil formulation” should add greater clarity, specifically with regard to a final spray oil formulation that contains extracted compounds but lacks plant material. Thus, the rejection of claims 15 and 17-23 is believed to be overcome and its withdrawal is respectfully requested.

Rejection Under 35 U.S.C. § 102

Claims 15, 17, 18, and 20 have been rejected under 35 USC § 102 (b) as being anticipated by Grinda et al (US 4,698,222).

The examiner has stated that

Grinda et al. disclose a method of extracting a natural insecticidal substance from a plant containing the insecticidal substance which comprises contacting powdered dry parts of the plant with an alkyl or alkenyl ester of a fatty acid, in which the ester moiety contains 1-16 carbons (see claim 1). Grinda et al. also teach that the ester is methyl, ethyl, propyl, isopropyl, butyl, hexyl, and octyl etc (see claim 3). Grinda et al. further teach that the product serves as spray for plants in order to protect them against insect (col 3, lines 5-10). It is inherent that the fatty acid ester is produced by esterification of an animal or vegetable oil. Grinda et al also teach using sodium lauryl sulfonate as emulsifier (Example 5) and using nonyl-phenyl-polyoxyethylene as surface active agent in Example 8 (thus surfactant). At last Grinda et al teach 350 g of chloroform (thus solvent) was added to 200 g of derris, reduced to a fine powder (plant material).

Applicants have amended claim 15 to recite “and a polar or non-polar oil that is pesticidally active” that was formerly part of dependent claim 22. The amended claim defines that the extraction of compounds from the plant material to form the final spray oil formulation is mediated by the components of the extractant, i.e., a sulfonated triacylglycerol and/or the fatty acid ester and one or more of the surfactant and polar or non polar oil that is pesticidally active. These components of the extractant affect the solvency power of the extractant, enabling a much greater diversity of plant compounds to be extracted. This provides a more complex plant extract

(and therefore more favourable spray oil formulation) than the use of fatty acid esters alone in the extractant.

As described in the MPEP 2131: “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants therefore submit that as amended, the claims are not anticipated by Grinda et al (US 4,698,222).

Rejection Under 35 U.S.C. § 103

Claims 15, and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grinda et al (US 4,698,222) in view of WO 01/15534, further in view of Hamanaka (JP 2002206099).

The Examiner recognizes that Grinda et al. does not teach a composition further comprising a pesticidally active polar oil, or contacting a plant material with surfactant. In recognition of these deficiencies, the Office Action alleges that WO 01/15534 teaches “an insecticidal composition that includes *Tasmannia stipitata* extract in combination with an insecticidally effective oil such as vegetable oil (polar oil) etc.” Additionally, Hamanaka “teaches extracting alpinia speciosa component for use as insect repellent, involves immersing *Alpinia speciosa* in a solution containing surfactants...” Thus, the Examiner alleges that extractants that are used to form an extract from plant materials containing a non polar oil that is pesticidally active or a surfactant are known in the art.

Applicants respectfully traverse this rejection. WO 01/15534 does not teach a composition comprising a plant extract and an extractant, the extractant including a fatty acid

ester and/or a non-sulfonated triacyl glycerol. WO 01/15534 does not teach contacting a plant material with a fatty acid ester or a non-sulfonated triacylglycerol, nor does it teach contacting a plant material with a surfactant, nor does it teach contacting a plant material with a polar or non-polar oil that is pesticidally active. Hamanaka does not teach a composition including a non-sulfonated triacyl glycerol and/or fatty acid ester, a surfactant, and a polar or non-polar oil that is pesticidally active. Furthermore, Hamanaka does not teach contacting a plant material with a non-sulfonated triacyl glycerol and/or fatty acid ester, either alone or in combination with a surfactant, in order to form a plant extract. Moreover, Hamanaka does not teach contacting a plant material with a polar or non-polar oil that is pesticidally active, either alone or in combination with a surfactant, in order to form a plant extract.

As such, the Applicants respectfully submit that the teachings of Grinda et al. in view of WO 01/15534, and further in view of Hamanaka do not teach or suggest the present invention.

Specifically, Grinda teaches the use of a fatty acid ester to extract compounds from plant material. A surfactant is optionally added to the composition after extraction has been affected. That surfactant cannot be used to extract compounds from the plant material as per the proposed claim because in Grinda it is added after extraction has been completed.

WO 01/15534 provides no teaching on how to form a plant extract beyond “the extract of *Tasmannia stipitata* is preferably prepared by solvent extraction of the new leaves, new stems and berries” (see page 2, lines 15-17). WO 01/15534 does not provide teachings that suggest the use of a polar or non-polar oil that is pesticidally active to extract plant compounds as required by the claim. In light of the failure of WO 01/15534 to provide any teachings on how to form a plant extract, the Applicants respectfully submit that the person of ordinary skill in the art would not be motivated to combine the teachings of WO 01/15534 with the those of Grinda *et al.* to

arrive at the present invention. Even if the person of ordinary skill in the art was motivated to combine the teachings WO 01/15534 in light of Grinda, the combined teachings would not yield the invention according to the current application.

Hamanaka teaches the use of an aqueous or water-soluble extractant with a surfactant to effect the extraction of compounds from *Alpina speciosa*. In contrast, the extractant of the current application includes a fatty acid ester and/or a non-sulfonated triacyl glycerol, a surfactant and a polar or non-polar pesticidally active oil. The person of ordinary skill in the art would recognise that the results of modification to an extraction process involving an aqueous or water-soluble extractant (such as that described by Hamanaka) cannot be extrapolated reliably to an extraction process involving an oleaginous extractant (such as that described by the present application). Accordingly, the results of the use of a surfactant in an extractant including fatty acid esters and/or non-sulfonated triacyl glycerols and a pesticidally active oil are not predictable in view of Hamanaka.

Accordingly, the Applicants submit that there is nothing in the teachings of Hamanaka to suggest use of a surfactant with a polar or non-polar pesticidally active oil in a fatty acid ester and/or non-sulfonated triacyl glycerol extractant, and, as such the person of ordinary skill in the art would not be motivated to combine the teachings of Grinda *et al.*, WO 01/15534, and Hamanaka. Applicants therefore respectfully request withdrawal of this rejection.

Conclusion

Pursuant to the above amendments and remarks, reconsideration and allowance of the pending application is believed to be warranted. The Examiner is invited and encouraged to

ATTORNEY DOCKET NO. 06142.0005U1
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directly contact the undersigned if such contact may enhance the efficient prosecution of this application to issue.

A credit card payment form PTO-2038 authorizing payment in the amount of \$65.00, representing the fee for a small entity under 37 C.F.R. § 1.17(a)(1), and an Amendment and Response to Office Action are enclosed. This amount is believed to be correct; however, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

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